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It was a Welsh reporter who headed a paragraph "Suicide of two Persons—Statement of the one that Survived." This seems more like a product of the sister isle, and if the writer was not of Hibernian birth or extraction, he might at all events, claim affinity in genius. The erroneous use of the word "other" has occasioned many a curious blunder. A Scotch paper recently announced that "a man named Alexander Buchanan, and two other women," were charged with assault.

THE ladies of the Elberon Hotel, which closed October 10th, forwarded four "James A. Garfield boxes" of clothing to the Michigan sufferers last week. The proprietor of the Elberon has refused to sell the fine crayon portrait of the late President, which has been in his office since last June. The portrait is one of the best ever made of General Garfield, and would have been sent to the Queen of England if its owner would have sold it.

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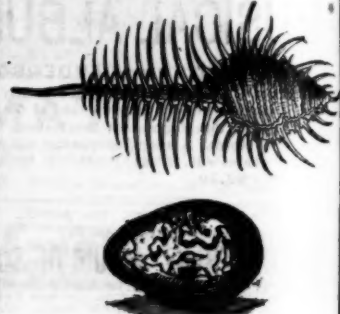
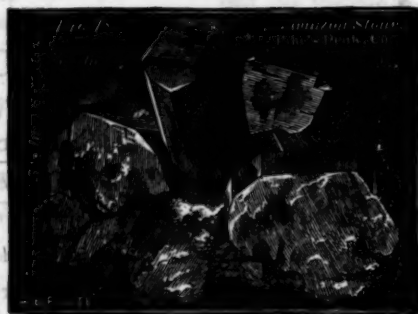
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CONTENTS OF THIS NUMBER.

| EDITORIAL. | Page |
|---|------|
| What is Education?..... | 3 |
| Teachers' Institutes..... | 3 |
| The Needs of the Empire State.. | 4 |
| Language Development as Seen in Quincy..... | 4 |
| THE SCHOOL-ROOM. | |
| Unruly Pupils..... | 5 |
| Lessons in Geometry..... | 5 |
| Object Lessons..... | 6 |
| Lessons in Numbers..... | 7 |
| Visit to a New York Primary School..... | 7 |
| Golden Thoughts..... | 7 |
| EDUCATIONAL NOTES. | |
| New York City..... | 8 |
| Elsewhere..... | 8 |

| | |
|--|----|
| New Jersey..... | 8 |
| LETTERS. | |
| EDUCATIONAL MISCELLANY. | |
| Naming the Grades..... | 9 |
| Change Inevitable..... | 9 |
| Revision of the School Curriculum..... | 9 |
| Education of Girls..... | 9 |
| The Sun's Light and Heat..... | 9 |
| Silk and Silk Culture..... | 10 |
| Visible Speech..... | 10 |
| FOR THE SCHOLARS. | |
| A School Girl's Stratagem..... | 11 |
| Don't Work..... | 11 |
| BOOK DEPARTMENT. | |
| New Books..... | 12 |

New York, October 29, 1881.

ANY of our subscribers who have bound copies of educational journals, which they wish to dispose of will please notify us. Most valuable literature will disappear unless saved. The teacher undervalues the writings of teachers.

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HON. HENRY KIDDLE resigned as City Superintendent of the New York Public Schools, in 1879. He still continues to subscribe and

pay for the SCHOOL JOURNAL. We mention this fact for two reasons, (1) there are many city superintendents who never subscribe for educational journals, who pay less attention to them than does King Kalakua of the Sandwich Islands; and (2) those that do subscribe stop their subscription when they go out of office. And the women.—We intend to found a gold medal for the women teachers who continue to subscribe after marriage.

Seriously, no business can thrive, officered by persons who have no more interest than is shown by most of those who go through the motions of doing the educational work of this country.

Are the schools "run" for the benefit of the children or for the benefit of those who want to get a living by running them? We claim the schools are for the CHILDREN.

WHAT is education? has been often asked, and the replies are usually sought for out of the dictionary, even by the teacher. The school is the place where education is dealt out, is it not? Certainly, you say. Let us then betake ourselves to the schools and see what is done in them. Of course there are classes in reading, spelling, arithmetic, geography, grammar, etc.; these are found in every well regulated school. But we notice a difference in the schools. In one the conversation of the teacher is explanatory, argumentative, suggestive and stimulative; it leaves a glow in the mind; and yet there are not many words used after all; the pupil is called on to speak and we feel that every sound, word and inflection is subject to critical examination; that the teacher is comparing the present condition of the pupil with what it was, perhaps last week, to see if there are signs of GROWTH. In another lessons are recited and we feel that is all; the teacher is satisfied if the words are in the memory; he calls for something learned last week. "In what year did Cæsar die? What relation was he to Pompey?" The quantity of knowledge on hand is his idea of education. Which of these classes do you belong to, reader?

THE State of New York ought to take the lead in properly educating those who are in turn to educate the children. The means now employed are the Normal Schools at Albany, Oswego, Potsdam, Geneseo, Cortland, Fredonia, Brockport and Buffalo, the teachers' classes in the academies, and the Teachers' Institutes. These are three very powerful agencies, but strange to say, nobody is obliged to attend a single one in order to get a certificate to teach! What do you think of that, you that are obliged to attend theological seminaries, before you can preach; you that must attend law schools before you can plead; you that must attend medical schools before you attend the sick? You think it is a farce and so it is.

Has not the time come for an advance movement? It certainly has. Who must head that movement. The Hon. Neil Gil-mour, Superintendent of Public Instruction,

Who must fall into line and support him? Every teacher in the state possessing the least desire to put teaching on a firm foundation. Are there many of these? We judge not, but that doesn't matter. Let those that live take hold of the great work of arranging for higher qualifications for the teachers; not a little more of the "three R's," but a knowledge theoretically and practically of TEACHING.

"WHAT is education?" This subject was proposed in these columns by a teacher of skill, experience, (and what is very unusual beside) THOUGHT. Varied answers have been given. Some quote to us the staple answers made by thinkers in the past, and that is well enough if the answer is really comprehended. But one may learn a definition and give it, and yet possess no idea of the meaning. The idiot may exhibit an astonishing memory. The teacher tells us education means development, and straightway goes to his school-room and develops? No, hears a lesson.

Without debating the question at all the opinion of a great historian may be given. And after you have read it you are asked, "Do you stand on that platform?" and if you do, "What are you going to do about it?" Can you believe this and go on as before?

"I accept without qualification the first principle of our forefathers: that every boy born in the world should be put in the way of maintaining himself in independence. No education which does not make this its first aim is worth anything at all. There are but three ways of living, as some one has said—by working, by begging, or by stealing. Those who do not work, disguise it in whatever pretty language we please, are doing one of the other two. The practical necessities must take precedence of the intellectual. A tree must be rooted in the soil before it can bear flowers and fruit. A man must learn to stand upright upon his own feet to respect himself, to be independent of charity or accident. It is on this basis only that any superstructure of intellectual cultivation worth having can possibly be built."

TEACHERS' INSTITUTES AGAIN.

In one of the last JOURNAL's there was an article which some have tried to make out to be unfriendly to teachers' institutes. It will take a smarter man than I know of to show that I am opposed to teachers' institutes. (1) I labored to have them established in New York State, more than thirty years ago. (2) I worked in them four years in Michigan. (3) I felt that the work done in them was so important that I christened this paper "The Teachers' Institute."

But, I believe in progress. An Institute is an educational school. Now, I believe that the principles applied to a school must be applied to the Institute. There must be sufficient time, proper grading of pupils, and appropriate instruction.

One of the best things lately done in this state has been the appointment of permanent instructors. That is one step, perhaps the step for this year. I ask for further movement. I want to see the County Institute a solid and certain fixture, as much so as the Normal Schools.

So I am "unfriendly to Teachers' Institutes," am I? If any one tells you that, tell him—he does not know what he is talking about. AMOS M. KELLOGG.

THE NEEDS OF THE EMPIRE STATE.

HON. NEIL GILMOUR, State Superintendent of Public Instruction.

It is plain a profound confidence is felt by the entire State of New York in your management of its educational interests. This is shown by your often re-election to office, and by the late decision of the Supreme Court which places the Normal Schools side by side with the County Institutes under your control. Hence, you decide in fact what kind of teachers shall be employed in the public schools.

Your predecessor performed a work which will be of lasting benefit to this state; every child feels it; every home feels it. But the establishment of *free schools* for the children is not as important as the securing of *good teaching* for them. The people of this state somehow contrived to get their children to school under the rate-bill system.

But it has been felt by every thoughtful observer for a half century that the weak point is the *quality of the teaching*, so that a normal school was established and finally other normal schools have been added so that now we have eight in our bounds. It appears by your last report that only about 800 graduates of these schools are teaching; while the whole number of teachers employed is about 30,000. This shows in a plain and painful light that the need of instruction in educational science still exists and as normal schools cannot be increased at present, I would beg to suggest to you this plan:

1st. Require all who have had no experience in teaching to attend a COUNTY EDUCATIONAL SCHOOL to be held for from four to six weeks; this school to be under the direction of the excellent "Institute conductors" you have appointed. The commissioner would give certificates good for a year to such as he found qualified at the end of the session.

2d. Require all who desire to continue in the profession beyond this one year to attend one of the normal schools for a year; to have, if found qualified certificates good for two years.

3d. Require all who desire to continue in the profession beyond these two years to attend a normal school for another year; then receive a diploma for life.

(a.) And then to supply temporarily, the needed number of teachers the normal schools could grant certificates for two years to those *who had experience*, and who generally rated with those who had been a year with them. And (b) your excellent plan of holding State examinations could be much extended if teachers saw no other way but that, or the attending a normal school in order to get life diplomas.

The present plan of holding County Institutes does not go to the root of the matter; the work has to be done over each year. There are schools to which young men and women can resort who desire to make a business of teaching. The normal schools are such; the weak point is that *none are obliged to go to them*. The state spends about \$160,000 to maintain these schools and gets a meagre equivalent because it allows those to teach who have not attended these schools.

The County Educational Schools should be *schools*, not institutes. A school to exhibit practical teaching should be held in conjunction with each, for an hour spent in such a school *actually seeing good teaching* would be worth a month of lectures. "Seeing is believing."

These changes will involve some legislation; but you Mr. Gilmour, have the confidence of the entire state; you have but to ask and it will be done. The public is ready. It may require more money, but the state can afford that, but money need not now be asked for of the state. I know no reason why the teachers of a county should not support the County Educational Schools. They do this in many states; from \$500 to \$1000 will pay the expense of such a school for four to six weeks. The expense of institutes in Pennsylvania is frequently \$600 and this is borne by the teachers; they do not complain, nor do they complain in Indiana, Illinois, Iowa, Kansas, etc.

Again, the normal schools should be relieved of the burden of doing just what the union and high

schools are doing—teaching the elementary branches of knowledge. This plan will crowd them with pupils, who will be obliged to come prepared to receive instruction in the art and science of teaching, the very object for which they were instituted.

You will find, Mr. Gilmour, that a demand for an improved quality of teaching exists in all parts of this state. The people are getting sick of the meagre results from the large outlay. They need *skilled workmen* in the schools. Supply them and you will quadruple the value of the schools.

Yours very respectfully,

AMOS M. KELLOGG.

LANGUAGE DEVELOPMENT AS SEEN IN QUINCY.

By PROF. J. G. MURPHY, Fishkill-on-Hudson, N. Y.
An address delivered before the Teachers of Dutchess County, at Mattewan, N. Y.

About the year 1843 there was introduced into this country a theory that an improvement could be made upon the natural method of teaching children to talk, by first teaching a child to utter the various sounds heard in the spoken word separately, and then teaching him to combine these elements, thus forming the word. This is termed the phonetic method, and is generally employed in the German schools, in teaching both spoken and written language. If the English written language resembled the German in being phonetic, the natural and phonetic methods, in speaking and writing would be the same, since it is evident that a child who can speak an entire word correctly, must be able to utter each sound heard in it correctly. While it is true that by far the greater number of written words in our language are not phonetic—not spelled as pronounced—it is also true that a great part of the words in the vocabulary of young children are phonetic, hence, so far as this class of words is concerned, the phonetic method of learning children to talk or read, cannot be superior to the natural one, except in cases where the organs of speech are defective. The natural method is adopted as the true one in Quincy during the earliest mental development of the child, and supplemented by the phonetic method as soon as he is capable of comprehending its use. The child discovers for himself that the spoken word is capable of being separated into parts or distinct sounds, by uttering the entire word slowly, and that each character in the written word indicates one of the sounds heard in the spoken word; and the single spoken word is considered the unit of oral signs, by which to indicate the possession of an idea, and a spoken sentence is considered the unit of oral signs by which to indicate the possession of a thought. So also in learning to write. Hence "written language is to the eye and hand what spoken language is to the ear and tongue." And, in the same natural way that he has learned to talk, a child is taught in the Quincy schools to read and write both at once, or both in the same exercise. Children in the primary grades in Quincy, are taught in groups from six to ten, called circles. As I have before stated, the first effort of the teacher is to break down all barriers of restraint and timidity between herself and the children, and in so doing engage them in pleasant conversation upon some subject with which they are perfectly familiar, never allowing her language to get beyond the children's vocabulary, thus leading them along from step to step, until she is perfectly satisfied in regard to the mental strength of the children and the ground covered in the mental development as well as the vocabulary used by them. In such a conversation the talk may have been about a hen, and the teacher while talking with the child has gone to the board and commenced drawing the picture of a hen, leading the conversation to the different parts of the hen, as she draws it. After completing the picture, by some simple device, she develops in the mind of the children that when they speak the word hen, their school-mates all think of a hen, and in like manner, when she points to the picture just made, they all think of a hen. In this way she develops in the mind of the children the fact that the spoken word and the picture each serve the same

purpose, viz.: to cause those who listen or see, to think of a hen. As soon as the teacher is satisfied that the children comprehend her thus far, she writes the word hen on the board, near the picture, telling the children that also causes her to think of a hen. She will then ask the children how many of them would like to tell her a story about that hen, and, of course, every hand will be raised. But in the meantime, while the talk has been going on, with a few strokes of the crayon the teacher has added some features to the picture—a few chickens, or it may be a nest and eggs—for the teachers in Quincy are as expert in the use of the crayon as the most accomplished lady in Fishkill is in the use of her needle. The children very quickly (associating the different parts of the picture thus made) tell many little stories in their own child's vocabulary, thus carrying out the teacher's plan for the development of ideas first, and then the use of words in naming and recalling ideas. As the children tell their stories—which, of course, consist of short, simple sentences—the teacher writes them on the board, telling the children each time what she has written; or what she has written says. When they are through telling stories, pointing to the first sentence, which may be, "I see a hen," she will ask one of the circle what that says, and so on with all the sentences, and all the children, and I have seldom seen an exercise of this kind in which there were not four out of five who could tell what each sentence said. Of course, the teacher has not given the written word hen until she has drilled each child upon its pronunciation and been satisfied that each could speak it without difficulty or hesitation; thus teaching the phonic analysis and synthesis of the word by pronouncing it first slowly and then rapidly. She now allows the circle to pass to their seats, and taking their slates and pencils to copy what is upon the board. This is one kind of what is termed "Busy work." Exercises similar to these which I have described, soon give the children quite an extended vocabulary, both oral and written. As soon as the children have acquired a written vocabulary large enough to be able to express their ideas with the pencil, another device is introduced, which is this: After the teacher has written upon the board the stories told by the children, she calls upon the members of the circle to each select a sentence upon the board, and as she calls upon them, to read and then erase the sentence which was in their minds, and then to pass to their seats. This is an intensifying exercise, inasmuch as several pupils in the circle may have in their minds the very sentence which is erased, and they are obliged immediately to select another, which, in its turn, may be erased by the next child called on. By calling upon the brightest pupils first, the teacher causes the dull ones to do the most work. If the child called upon cannot read the sentence promptly, another child is called upon to do it, and he selects another sentence, again causing the dull pupil to do the most work, and as use brightens the intellect, in not infrequently happens that the ones who are dull at first, in a few weeks become the brightest. When the sentences have all been erased, the children are permitted to write as many stories as they can about the object upon the board, and you may rest assured that for the next half hour this circle will give the teacher no trouble by any acts of disorder. Because there is an intensifying influence exerted upon the mind of the child, by the gradual growth of the picture, as it is produced by what seems to the child the magic art of the teacher, which is not exercised by the presentation of an entire picture at once.

TO BE CONTINUED.

A FOREIGN scientific journal says while open-air life is favorable to health, yet it retards the growth in early youth. The children of well-to-do parents, carefully housed and tended, are found to be taller for their age than the children of the poor, but they are not so strong in after years; the children of the working classes who are in fields all day are almost invariably short for their age. After sixteen or eighteen, the lads shoot up, and become great, hulking, broad fellows, possessed of immense strength. According to these statements, it would seem that in-door life forces the growth at the wrong period, and thus injures the constitution.

THE SCHOOL-ROOM.

For the SCHOOL JOURNAL.

UNRULY PUPILS.

By E. R.

It not unfrequently happens that a number of large boys enter the school-room and bring perplexity, mischief, and great disorder in their train. What to do with them the teacher knows not. They are too large to punish. If left to themselves they are more lawless than the younger pupils. The teacher is disposed to shut his eyes to their disobedience of his rules; he "gets along the best he can" from day to day, and begins to look forward to his school-room with dread. He fears every day that something will happen, some rebellion, some catastrophe, and rejoices when the day closes without one. He thinks the trouble is only postponed, and so is never serene and happy. If certain pupils were not in the school he thinks teaching would not be so disagreeable a business. Teachers have been known to change from school to school solely to escape troublesome pupils.

Now, not every one who teaches can manage the average pupil. Some get into frequent snarls with the best pupils in the school-room. They possess no art of management whatever; they ought not to try to teach. A single instance comes to mind. A lady who had been employed in a normal school was highly recommended as an assistant. She was put in charge of a room of twenty-five or thirty pupils; there was not a vicious child there, and yet in a few days disorder reigned triumphant. It was painful to see the vain efforts of the teacher to keep those children in order; she rapped vigorously on the desk with a ruler; she pounded on the floor with a pointer; struck a call-bell with a dozen rapid blows; she would demand in a querulous tone, "John, why don't you keep your feet still?" or, "Mary, there you are, out of your seat again;" "Henry, you'll have to stay in at recess if you don't study," etc., etc. In vain did I suggest improving the moral tone, or planning to meet the certain difficulties that always infest the school-room. Her only reply was, "They are the worst children I ever saw."

"After six weeks she was succeeded by another teacher. The atmosphere at once seemed changed; the pupils looked brighter and more moral. (They were fast becoming bad children under the other teacher.) Their clothes seemed to be tidier. In two weeks' time the teacher came to my room on some errand. Remembering the former state of things, I nervously said at once, "Who is in charge of your pupils?" "I wish you would go quietly and see if they are not in perfect order." I had the curiosity to go, and found a scene of contentment and industry. This teacher's remark was, "They are such good children!" It is evident, then, that some teachers make the disorder they complain of.

But let us suppose they do not actually do this; they may then not have any skill at all with what may be termed *positive* natures. A young lady has a school of thirty boys and girls, all under fourteen years of age; she gets along without real trouble, and thinks she is succeeding very well. But the door opens one Monday morning and in walk two or three boys of sixteen, seventeen, or eighteen years of age. Her heart fails her, and she fancies trouble at once.

Let us analyze the case. (1) They are large, and this seems a bad feature. But why? Men are easier to manage (if managed on the principles that apply to men) than children. Let this be a reassuring fact. (2) They appear brazen-faced. But is the teacher sure this is not put on to cover the embarrassment they feel? No one is more easily embarrassed than a young man. The young man may meet a horse running away with courage, but the laugh of a girl will put him into agony. (3) They enter together, as though banded for mischief. This is done, probably, to cover their timidity. (4) They don't observe the rules of order, but seem to despise them. This may result from not knowing them, or from deeming them wholly unneces-

sary. For instance, a teacher had taught her pupils to sit with their hands on the desk before them; the right hand laid upon the left. A large boy disregarded the rule, and it led to serious difficulty, for the teacher refused to let any one go out until he placed his hands in the required position. All sat for half an hour, when he complied. Without discussing the point whether, the rule being made, the teacher should insist on its observance, this other point demands attention. The younger pupils did not think of the rule, they were in the imitative stage; the older pupil being in the reasoning stage thought about the rule, and decided it was of little account whether the right hand, or left hand was placed above. The conflict was, then, a natural one, and might be expected; the rule showed a lack of discrimination and tact on the part of the teacher. (5) Are you not prejudiced? It requires a well-balanced mind to feel at ease when a pupil as tall as yourself enters, rough in demeanor, careless in dress, and apparently defiant in look. The obsequiousness of the pupils is in contrast with the sturdy independence of the new comer. The teacher secretly says to himself, "I shall have trouble with that boy; he does not look as though he would mind." He looks severely at him, and begins to watch him. This is seen by the pupil; he feels a prejudice in return, and thus at the very outset the foundation of real trouble is laid. It sometimes happens that the teacher at a later period finds out that this young man came with the best intentions, and that he was quite the reverse of what his prejudice asserted.

(6) Consider this: when you meet a stranger a period longer or shorter elapses before you understand each other. The skillful person endeavors to make agreeable impressions; if he is successful the stranger is pleased, and you have a friend. The teacher should follow this example; he should bear in mind that the pupil is a stranger you do not know; he does not know you. Put forth tact, which in this case is a knowledge of human nature, and power to influence and lead it. "Water will not run up hill." There is a certain way in which human nature runs; it will not run up hill; the teacher must study its movements.

1. *Do not be antagonistic.* The teacher sees a new pupil; he is large, appears defiant, and a dislike is at once felt. Antagonistic measures are adopted and trouble begins. A young man came into school; finding he could not read, I told him to go in the class with the youngest pupils; he refused. Supposing him to be unruly, I neglected him entirely. A young pupil went to him at recess and showed this young man something about reading. This made me ashamed, and I said pleasantly:

"John, I will give you some help."

That young man became the best friend I had in stormy days that succeeded.

2. *Be friendly.* I had been told that on a certain day two boys were to enter the school who had been very troublesome, and I awaited their entrance with some trepidation. They came in, slamming the door and walking heavily. At recess-time I stopped them when going out, and called them to my desk. I exerted myself to talk pleasantly about their work, and all sorts of things. They became acquainted and gave me no trouble. "Those who would have friends must show themselves friendly," says the proverb. The teacher may ask some large boy's counsel about some matter connected with the school or not, and thus draw him out. On one occasion I had a boy who was overgrown and disposed to be antagonistic. I asked him to stay after school, and then said I wanted to go over to a certain village on a certain night, and asked him how I should get there. He offered to take me, as he had a good horse and carriage. This gave me an opportunity to talk with him and know him. The result was that he became ambitious and studious, occasioning much wonder and talk in the district. He had been a leader in the opposition before, but was not so afterward.

I had in another school a young lady about twenty years of age, who had been one term to a boarding school, and who was disposed to be very

critical. I found, too, that her parents were very influential and intelligent. I saw the first day that she was not pleased with my plans; so I asked her after school to tell me what she had studied. In this way she had an opportunity to tell me that she had been at the boarding school at O—.

"I am glad to know that," I said, "for you will be able to help me. You know how things should go in a good school." She came with a new motive the next day—to be helpful, and not critical.

3. *Give occupation.*—I mean by this more than the usual occupations. Let the teacher consider the form of a church. The skillful minister has his deacons, elders, etc., and these in turn have committees. To know how to organize a body of persons is a great talent. Let the teacher have monitors chosen; let him have an advisory committee, and lay out work for them. Let him adroitly put on these committees some one whom he fears will be troublesome. He will have something to think about besides mischief. There can be committees on neatness, order, entertainments, etc.

4. *Tact.*—After all, tact is the chief reliance. Difficulties arise from various sources, and only tact will overcome them. I had given a large boy a certain seat. While I was teaching a class he changed to another. I saw it but I said nothing at the time. I doubted if I told him to resume his former seat whether he would do it. I called him pleasantly to my desk, asked him if he would be kind enough to clear the black-boards. He complied readily. I then said so as not to be heard by others, "I think you are not in the seat I gave you; do not change your seat without permission. If you do not like that seat consult with me at recess, or after school. I always like to be accommodating." I did not watch him to see what he did, but in a few moments, turning around, he was in the right seat. The tact in this case was in sparing his feelings. Had I commanded him to change, his combative powers would have been aroused.

For the SCHOOL JOURNAL.

LESSONS IN GEOMETRY

[The teacher of the primary class may think the truths of geometry to be too difficult to be comprehended by the young pupil. It is true that the study of geometry is generally postponed until the secondary (high) school is reached; but this is a great error; for, but a small percentage of those who enter the primary school ever appear in the secondary school; hence, the valuable truths of geometry are unknown to them. But more than this, geometry trains the inventive and constructive faculties. But it is not the geometry of Euclid that is to be presented to the young pupil. On the contrary, he is to learn the simple elements that lie within his grasp as much as does the counting of objects, or addition by means of putting objects together. The method to be employed is the method of self-teaching. This method, as applied to geometry, has been employed in England, and with great success. Herbert Spencer says that he has "seen it create in class of boys so much enthusiasm that they looked forward to their geometry lesson as the chief event of the week." The only objection to it is that it requires teaching capacity in the teacher and a real interest in the intellectual welfare of his pupils.]

(1) Let the teacher place a cube on the table and teach that the top, bottom and sides are called its faces or surfaces; that the edges of these surfaces are called lines.

(2) The distance between the top and bottom of the cube is called the height, depth, or thickness; the distance between the right face and the left face is called the breadth or width; the distance between the front face and back face is called the length.

QUESTIONS.

1. Show, by pointing or touching, how many faces or surfaces a cube has.

(Explain that a plain surface is such that a line placed on it rests wholly or all along in that surface. Try the desk surface with a ruler, or edge of a sheet of foolscap.)

2. Is the surface of the cube a plane surface?

Show why.

3. How many lines are formed on the cube by meeting of the six faces?

[Explain that the ends of lines are points; and that the intersection of lines gives a point.]

4. How many points are made by the intersection of lines on the cube? Point them out.

[Explain that the meeting of two lines makes an angle; show it by putting two sticks together, not by drawing lines on a blackboard.]

5. How many angles on the cube made by the meeting of the straight lines?

6. Point to two lines on a cube that are on the same surface and yet do not make an angle.

7. Point out angles in the walls.

8. Point out angles in the windows.

9. Point out angles in the desks.

10. Point out angles in the books.

[Explain that the meeting of two surfaces forms a dihedral angle; bring together two books.]

11. Point out the dihedral angles in the room.

12. How many dihedral angles has the cube?

13. How many has the desk.

14. Point out the dihedral angles in the window.

15. Make dihedral angles by using two cards; by folding paper.

[Explain that the meeting of these surfaces makes a solid angle; use three cards. A solid angle is often called a corner.]

16. Look around and tell me where there is a solid angle.

17. Find four solid angles in this room.

18. Find some solid angles in the windows.

19. Point out the solid angles in the cube.

20. How many are there?

[Show a circle cut out of paper, and explain that the bounding line is a curve. Give each pupil a circle. Hold against its edge a ruler, to show that they do not agree. Explain that a curve line is a line such that a straight line does not coincide with it but in one point.]

21. Point out a curve line.

[Supply some more circles and explain which is the center, and which is the circumference.]

22. Cut the circle into halves. Which are the curved lines? Which the straight ones?

[Explain that the half circles are usually called semi-circles.]

23. Cut the semi-circle into halves. Which are the straight lines? Which the curved lines?

[Explain that the quarter circles are usually called quadrants.]

24. Compare the straight lines with each other. Are they equal?

[Explain that a figure with a curved line about it, and all the lines from the center equal, is called a circle. Get a compass and show the lines from the center to be equal. Explain that a line from the center to the circumference is called a radius; two lines are called radii.]

25. Take the compass and draw a circle.

26. Which is the radius? Draw the radius and write its name.

27. Which is the circumference? Write on the line its name.

[Show a scale of inches, and show how to apply the compass to it.]

28. Draw a circle with a radius of two inches.

29. Draw a circle with a radius of three inches.

30. Draw a line from one side through the center to the other side.

31. How many radii in that line?

[Explain that such a line is called a diameter.]

32. Draw four more diameters.

33. How many radii are there?

[Explain that a part of the circumference is called an arc.]

34. Point out an arc and write its name. Point out a diameter. Point out all the radii you can see.

35. Make a circle and draw a diameter. Compare the arcs. What do you say of them?

36. Is the circled halved?

[Explain that half of a circle is called a semi-circle.]

37. Is the circumference halved?

[Explain that the half of a circumference is called semi-circumference.]

38. Draw a circle, and draw two radii.

[Explain that the inclosed space is called a sector.]

39. Point out a sector and connect the ends of the radii.

[Explain that the line connecting two radii is called a chord.]

40. Point out a chord.

41. Draw a circle; draw a diameter through it. Which is the semi-circumference? Is the circle halved? Which is the semi-circle?

42. Halve each semi-circle. How many quadrants? How many diameters?

[Explain that when one line stands on another line so as to divide the space equally the angles formed are called right angles.]

43. How many right angles are there in the circle?

44. What sort of angle in a quadrant?

[Explain that geometers divide a circle into 360 parts, called degrees; that the larger the circle the larger the degree, just as in oranges, the larger the orange the larger the half will be.]

45. If there are 360 degrees in a circle how many degrees in each quadrant?

46. How many degrees in a right angle?

[Explain that the angles less than right angles are called acute angles; those larger are called obtuse angles.]

47. Can an acute angle have 46 degrees in it?

48. Can an obtuse angle have 40 degrees in it?

49. Which is the largest, an acute or an obtuse angle?

For the SCHOOL JOURNAL.

OBJECT LESSONS.

GUM ARABIC.

[The teacher has a bottle with a dozen pieces of gum arabic in it.]

Children, I have something in this bottle that you do not often see. It is from a tree that grows many thousands of miles from here. It is gum Arabic; that is, gum from a tree in Arabia. I will give you each a piece of it. Remember now what I have told you about the other things I have put in your hands; you may look at it, and smell of it, but you are not to bite it or pick it to pieces unless I tell you you may. Try and find out all you can about it. Well, John? *It is hard.* Yes, that is correct. To know whether it is hard you try it with your finger nail. If your finger nail goes in easily you say it is soft; if it does not you say it is hard. This then, is what? hands raised, that think it hard. All think this is hard. Well, Mary? *It is yellow.* Do you all agree with this? Some say yellowish; yes, its color is yellow. What more have you found out? Henry says his piece is bright on one side. Yes, when it is broken it is bright. Hold it up to the light. Does any light come through? Some think there would be some if there was a large piece. What do you call that quality that lets light go through? What do you say of objects that let light through? I will write the word. *Transparent.* Pronounce it. See what I write:

Gum Arabic. { hard,
yellow,
bright,
some transparent.

Now, I shall try an experiment with it. John bring the pieces. Put them in the bottle; now, pour in a little water. I will set it in the sun to have it keep warm. In a few days we will see what happens.

[A day afterward it will have dissolved. The teacher then says:

Do you remember that we put the gum-arabic in a bottle? What has become of it? I do not see it. Has any one taken it out? Willie says it is dissolved. What does that mean? I will write it on the board. Dissolve means taken up by the water. Will iron dissolve? Here is a bottle and I will put a nail in and shake it. Does it dissolve? You see what I do if I want to find out. I try an experiment. Well, I tried an experiment on the gum-arabic and it dissolved. Now that is one more quality. What qualities did we find the gum to have? Thomas may tell us. *Hardness, yellowness, brightness, transparency.* Shall we say *ness*?

No. Some transparent, and dissolvable in water. [Explain that soluble is used for dissolvable.]

I touch the liquid in the bottle with my pencil and what do I see? Look, I put it on the paper. *It sticks.* Yes, suppose I want to make two pieces of paper stick together, I could use it. So, I will get a brush and will paste this paper on the book. It will be quite useful to us.

Now, who can tell what it may be used for. [Postage stamps, envelopes, wrappers, hand-bills, kites, scrap-books, etc.]

[The language of the teacher is given. The pupils, if the teacher is skillful will say as much as she. But it is not necessary to give their language. The teacher will in no case tell them what they can find out for themselves. It may take several days to complete an object lesson properly. What of that? Make the children inventive, experiment-loving and trying.]

MICA.

Mica is a very common mineral in some localities, but a kind that is a merchantable article is by no means common. *Muscovite*—the clear variety—is essentially a silicate of aluminum and potassium. When the crystallization is uniform it can be easily separated with a knife blade into very regular flexible and elastic sheets of almost any required thickness. It is not affected by water or strong acids (with the exception of hydrofluoric acid), and may be heated quickly to redness without danger of melting or cracking it. In thin plates or sheets it resembles glass, but is not brittle, and this, in connection with the other peculiar properties alluded to make it available and serviceable as a substitute for glass under conditions which preclude the use of the latter. Mica is never quite colorless, although in good samples the color is barely perceptible in the thin sheets. That having a faint wine or brandy tint commands the best prices.

In the New York market the mineral is usually sold by the pound, in sheets cut to sizes varying from two inches to fifteen inches square, the price varying with the size and number of sheets to the pound, color and quality. When the sheets are properly split, trimmed and cut to size the prices for good clear mica vary from twenty cents to eight dollars per pound.

Of the numberless uses to which this mineral glass has been put, it is chiefly in demand for the glazing of stone and furnace or heater doors, and as a substitute for glass in some kinds of lanterns, as it is much lighter and tougher than glass, and is not easily ruptured by jar or concussion. The latter consideration has caused its substitution for glass lights on gunboats and naval vessels.

Mica is used by electricians for certain insulating purposes, and also to some extent by makers of philosophical and optical instruments. Good mica because of its lightness, is often employed as a substitute for glass in spectacles designed to simply shade the eyes or to protect them from dust, cinders or flying particles of metal or stone for travelers, millwrights, grinders, polishers, and others whose work necessitates such protection. Vessels of mica are often used in the chemical lecture room and are particularly serviceable in the experimental illustration of the properties of certain gases, the burning of metals in oxygen, etc.

Formerly most of the merchantable mica used in this country was imported, but for the past few years—since 1867—our supply of the mineral has been derived chiefly from mines located in North Carolina. The product of the mines is hardly equal to the demand, which is increasing very rapidly.

"THE normal schools tell the colleges that their graduates are not fit to teach in the public schools; that though acquainted with the Latin language, they are not with the English; that though they can apply the calculus they cannot teach arithmetic."—*The Student.* (To speak the truth, often gets the speaker into difficulty. The college graduate is supposed to know how to teach, because he knows much about things that will never be learned by his pupils. The academies and colleges fought the normal schools, and fought bravely; but it was in vain. The colleges should establish educational departments.—*Editor.*)

For the SCHOOL JOURNAL.

LESSONS IN NUMBERS.

By H. J. M.

PERCENTAGE.

Five minutes since, the INSTITUTE for October was in my hands. Now I am trying to write something for a fellow teacher. That is, I will tell how I succeed best in teaching this subject: I first do a little tabulating as follows:

| | | |
|------------|----------|--|
| Fractions. | Decimal. | Having denominator consisting of 10, 100, 1000, etc., or one with ciphers annexed. |
| | Common. | |
| | | Having any number for denominator. |

Then I begin with decimal fractions.

| | |
|--------------------|--|
| Decimal Fractions. | (1.) Those having 1 with any number of ciphers annexed, for denominator |
| | (2.) Those with 1 with one cipher annexed as .10=ten hundredths, or in Latin, "10 per cent." |

This classifying shows that percentage is simply a department of fractions. Instead of being something new and very hard to understand, it is something already learned. When reducing a fraction to a given denominator this was learned.

I then make my pupils familiar with the term *per cent.*, teaching them that the "English of it" is *hundredths* and may be expressed in different ways, as 6%, .06 or $\frac{6}{100}$ each meaning the same. Percentage can in this way be taught by fractions; which I think is the best way for beginners.

Now for an illustration: \$1500 is $12\frac{1}{2}$ percent. of what number? $12\frac{1}{2}$ per cent. = $\frac{12.5}{100} = \frac{1}{8}$.

Now, the proposition simplified may read \$1500 is $\frac{1}{8}$ of what number, which the dullest of the class will easily understand and perform.

A word about teaching Arithmetic in general:

Do not set pupils at the hard examples and get them discouraged. The principles are involved in small and easy ones and principles are what we are after. I have heard some say "Work a week if need be on an example and you will never forget how to do it." This is nonsense; what teacher wants his pupils to remember "how" to do examples! I don't. I do earnestly desire, however, that my pupils know the principles involved in all their arithmetical work; so that, should their memories fail them any number of times every day, they shall be able to ascertain *how* the operation is performed.

Memorizing may be needed in pursuing other studies, but in arithmetic, it is pre-eminently mischievous to do it.

For the SCHOOL JOURNAL.

VISITS TO A NEW YORK PRIMARY SCHOOL.

It was on a pleasant morning in the early part of October when the broad staircase leading to the primary department of Grammar School No. 49 in 37th street was ascended; Miss Buckalew, the genial principal, was found in the large assembly-room and from her a cordial reception received. To the ears of the visitor, deeply interested in school matters, had come reports of the excellencies of this school, and she desired to see for herself the work going on, and to draw her own conclusions. Nothing more delights Miss Buckalew than to have an appreciative visitor; and such come here from all parts of the country. The visitor's register is well-worth examining.

In passing from room to room great neatness and cleanliness were observed everywhere. The teachers' desks, the black-boards and walls, breathed out the adage, "There is a place for everything." The appearance of the children showed great attention was paid to personal neatness. This result is attributed to the 'body-lessons' given in this department. Quiet and order reigned in the class-rooms, nor did these appear to be the result of loud commands and threats, but rather of studies invested with interest, of genuine work, and good methods.

The following are a few of the many lessons which were witnessed:

BODY LESSON.

The whole class stood erect and repeated in concert the formula:

"My body is built of bones, covered with flesh

and skin. The parts of my body are my head, my trunk, my arms, my hands, my legs, my feet. I breathe through my nose and my mouth, and take the air into my lungs. The blood flows through my body all the time from my heart. The parts of my head are the crown, the back, the sides, my face and my two ears. The parts of my face are my forehead, my two temples, my two eyes, my nose, my two cheeks, my mouth and my chin. The parts of my neck are the back of my neck, and my throat. The parts of my trunk are my back, my two sides, my chest, my two shoulders, my two arms, my two hands, my two legs, my two knees and my two feet."

As the different parts were mentioned, the children performed a series of concerted movements, touching head, trunk, arms, legs, feet, etc.

THE EYE.

[This lesson was given in a higher class than the last witnessed.]

I have two eyes to see with. They are like balls in deep, bonysockets, which protect them from injury. The black circle in the middle is the pupil or window of my eye. The colored ring around the pupil is the iris or curtain. The white parts is the eye-ball. My upper and lower eye-lids cover my eyes and protect them from dust. My eye-lashes are for beauty, and to brush the dust away from my eyes. My eye-brows keep the perspiration from rolling into my eyes, and they are also for beauty. My eyes are washed by tear drops every time I wink my eye-lids. To preserve my eyes I must keep them clean and cool. I must not read or sew in a faint light.

NUMBERS.

In order to practice the pupils in addition single columns of numbers were placed upon the board. For example:

| | | |
|---|---|---|
| 9 | 7 | 2 |
| 7 | 8 | 8 |
| 2 | 8 | 6 |
| 5 | 6 | 5 |
| 5 | 6 | 7 |
| 6 | 4 | 4 |
| 7 | 6 | 8 |
| 7 | 7 | 8 |
| 6 | 6 | 7 |
| 9 | 5 | 7 |
| 8 | 4 | 6 |

Individual members of the class were called upon to add, proceeding from top to bottom, thus for right hand column saying 2, 10, 16, 21, etc., and then beginning at the bottom and going to the top, saying 6, 13, 20, etc., thus verifying the results.

(2.) In order to teach pupils to read numbers, the teacher placed upon the board 80004. A member of the class read it. The teacher added a stroke to the third cipher making 80064; then it was read by another pupil; a stroke was added to the second cipher making 80964; it was then read by a third pupil; a stroke was added to the first cipher, making 88964; it was then read by a fourth pupil; she then prefixed 1, and the figures stood 188964. She annexed 2, making 1889642; it was then read by a sixth pupil.

2008 was next placed on the board; a pupil read it. The first cipher was changed into a 6, making 2608; it was read by a second pupil; the second cipher was changed into a 9, making 2698; it was read by a third pupil; the figure 5 was prefixed, making 52698; and this was read by a fourth pupil; the figure 4 was annexed, making 526984 and this was read by a fifth. The promptness of the pupils was a very pleasing feature.

PHONETICS.

A list of words was written upon the board, somewhat in this manner:

| | |
|--------|-------|
| whole, | give, |
| ring, | have, |
| sing, | bell, |
| talk, | run. |

The teacher pointed to the word 'whole.' The class repeated the word in concert; then they spelled it, the sounds "h-o-l—hol," adding "w" and "e" are silent, only sound of h, only sound of l,

first sound of o." Then they took up the word 'ring;' repeated it in concert, and gave the sounds "r-i-ng, ring," adding "only sound of r, only sound of ng, second sound of i."

While the class recited the teacher stood at the board, crossing off the silent letters as they were mentioned, and placing over the other letters the figures indicating the numbers of their sounds. After the concert lesson, individual members were called upon to recite. The silent letters were mentioned first, and the others taken up in regular order.

FORM LESSON.

(1.) To the end pupil of every row a box of forms was given, the box containing square, oblong, triangles, circle, ring, sphere, cylinder, cone, triangular prism, square prism, triangular pyramid, square pyramid, etc.

(2.) At a signal from the teacher all hands were outstretched in such a position that the box of forms might be placed upon them.

(3.) The end pupil placed the box on his neighbor's hands, and himself took the first form his fingers touched from the box, perhaps a ring. The box was then passed along until every pupil was supplied.

(4.) The pupils stood, one after another, and described the form in their hands in a clear and audible tone of voice, and touched the several parts as they were described. Thus "I have a ring; it has two curved surfaces inside touching both, one outside the other;" Another said, "I have a square prism; it has two square ends and four oblong sides. Another said, "I have a triangular prism. It has two triangular ends and three oblong sides." Another said, "I have a triangular pyramid; it has three triangular sides which meet in a point at the top, and a triangular base."

For the SCHOOL JOURNAL.

GOLDEN THOUGHTS.

[These can be used by the live teacher after morning exercises and distributed among the class, or one may be written on the black-board each day.]

The most delicate, the most sensible of all pleasures, consists in promoting the pleasures of others. —LA BRUYERE.

Heed how thou livest. Do not act by day Which from the night shall drive thy peace away.

In months of sun so live that months of rain Shall still be happy. Evermore restrain

Evil and cherish good, so shall there be Another and a happier life for thee.—WHITTIER from the *Sanscrit*.

"We live in deeds, not years; in thoughts not breaths; in feelings, not in figures on a dial. We should count time by heart throbs. He most lives who thinks most, feels the noblest and acts the best."

This above all—to thine own self be true; And it must follow, as the night the day, Thou canst not then be false to any man.

—SHAKESPEARE.

Trust not to each accusing tongue

As most weak persons do, But still believe that story false

Which ought not to be true.—SHERIDAN.

Dignity is at once the thinnest and most effective of all the coverings under which duncedom sneaks and skulks. Most of the men of dignity, who awe or bore their more genial brethren, are simply men who possess the art of passing off their insensibility for wisdom, their dullness for depth, and of concealing imbecility of intellect under haughtiness of manner.—WHIPPLE.

Be careful that you do not commend yourselves. It is a sign that your reputation is small and sinking if your own tongue must praise you; and it is fullsome and unpleasant to others to hear such commendations. Speak well of the absent whenever you have suitable opportunity. Never speak ill of them or anybody, unless you are sure they deserve it, and unless it is necessary for their amendment or for the safety and benefit of others.—SIR MATTHEW HALE.

EDUCATIONAL NOTES

NEW YORK CITY.

THE Board of Education met Oct. 20th.

The following resolutions were offered by Mr. Wickham:

"On the 5th of the present month Dr. Josiah Gilbert Holland, formerly President of the Board of Education, suddenly departed this life, and rests from his long labors and honorable career as a writer, a scholar and an earnest and enlightened friend of popular education. He was appointed a commissioner Oct. 4th, 1872, to succeed Hon. E. L. Fancher, and on the organization of the Board of Education for 1873 he was chosen President, in which capacity he continued until the re-organization of the school system in April of the same year.

In placing on record this brief tribute to the labors of our predecessor in office, it is hereby

"Resolved, That this board has learned with feelings of deep regret of the sudden removal of Dr. Josiah G. Holland, former President of this board, and of the termination of his distinguished labors as one of the most favored of the literary men of our country.

"Resolved, That this board tender to his widow and family the expression of their deep sympathy with them in this bereavement, which is felt in common by so many of our countrymen.

"Resolved, That a copy of these resolutions be signed by the President and Clerk, and transmitted to the family of the deceased."

TEACHERS' ASSOCIATION, at Steinway Hall, Oct. 29.—

1. "Melodia," Signor G. L. Tyler.
2. Polonaise from Mignon, Miss Emma S. Howe.
3. Song, St. Agnes' Eve, Mrs. Florence Rice Knox,
4. a. The Widow's Courtship, Miss Settie Blume.
- b. Daisy's Faith,
- c. Robert of Lincoln.
5. Duo from Don Pasquale, Miss Howe and Mr. Tyler.
6. Romanza, Dal Avito Snel Natale, Sig. C. Orlandini.
7. Grand quartette, Rigoletto, Mrs. Knox, Miss Howe, Messrs. Tyler and Orlandini.
1. My Sweetheart when a Boy, Mr. Tyler.
2. Duo from La Favorita, Mrs. Knox, Sig. C. Orlandini.
3. a. The Night Watch, Miss Settie Blume.
- b. A Bad Boy's Views of Life,
4. The Daisy, Miss Emma S. Howe.
5. Grand cavatina, Largo al Factotum, Barber of Seville, Signor Carlo Orlandini.

THE WOMEN'S INSTITUTE OF TECHNICAL DESIGN.—The need of a school to teach the art of producing designs for carpets, oil-cloth, wall-paper, etc., has been greatly felt in this city. Mrs. Florence E. Corey, a graduate of the Cooper Union Normal class, is the principal, and arrangements have been made for a thorough course of instruction. Among the managers are W. B. Kendall, R. Martin, W. M. Daintrey, W. Berri, Montague Marks, Messrs. McCallum, and Halliday, Geo. C. Wright, John S. Clark and Camille Piton. Most of these gentlemen are connected with the carpet trade or manufacture, or with practical art. The place selected is 339 West 34th Street and the term opens Oct. 27. That such an enterprise will succeed is simply saying that it is greatly needed. There are many girls leaving the public schools each year who could design for the trades if properly taught; but as yet no such opportunity has been presented. The terms are from \$15 to \$25 per term of four months. We shall keep our readers advised of this important movement.

PROF. Solomon B. Woolf has been invited to deliver a lecture on Drawing before the Male Teachers' Association, on Saturday, Nov. 5th, at the College of the City of New York, at ten A.M.

NEW JERSEY.

W. D. MYERS, Manager, 21 Park Place, New York.

NEWARK.—The principal of the Washington Street School is one who, if health backs up an active and inventive mind, will take rank with the foremost educators. Mr. Gregory can realize that others have ideas besides himself, and although possessing much originality, yet seizes the good from all sources. One of the guarantees of his future success is his systematic way of carrying out his plans. After visiting his school you are impressed with the orderly way in which everything is conducted. The order is not the outcome of tyranny, but of the affection felt for the principal and teachers. The most timid little girl comes to the principal without the least diffidence to make her childish requests and no license manifests itself anywhere in consequence of this law of love. Mr. Gregory loves his work and all work tending to the good of his fellow-teachers.

INCORRIGIBLE PUPILS.—While the writer was a police magistrate and afterwards a principal of a public school,

the disposition of incorrigibles was always a matter of grave consideration. The New Jersey Reform School could not under the most efficient management become a proper place for commitment, as it received within its walls stigmatized and convicted young criminals, whereas the great majority of street boys are among the brightest, and would, under judicious training, develop into useful members of society. To be convinced of the possibilities lying under the torn jacket, it is only necessary to visit the N. Y. Juvenile Asylum and spend a day in its class-rooms. Close observation will show results as good as will be found in the public schools. Mr. Eugene L. Mapes, the superintendent, evidently knows what teaching is, and his assistants intelligently carry out his plans and do most effective work. The children look happy, recite with ease and seem free from the machine grind. They are treated kindly, but with great firmness. Many things of an industrial character are taught after school hours and instruction in both vocal and instrumental music is given twice a week.

Newark without any State aid has solved this problem, and now her street Arabs no longer vex teachers and citizens. Five or six such reformatories are needed in New Jersey, and those who wish to co-operate in the passage of a bill for their establishment will address W. D. Myers, 21 Park Place.

ELSEWHERE.

PENNSYLVANIA.—The Berks County teachers held their nineteenth annual Institute at Reading, Oct. 24-28, David S. Keck, the efficient county superintendent, presiding. To show the Pennsylvania plan we give the order of exercises; Monday.—Welcome address, Supt. Keck; School Organization; Book-Keeping; address in memory of Prof. Ermentrout. Evening.—Big bugs and little bugs, and all sorts of bugs except humbugs, by Dr. John H. French. Tuesday.—School Organization; Map Drawing; Penmanship; Brevity in speech and writing; U. S. Constitution; Essay; Articulation; Grammar; Ornithology of Berks county. Evening.—Snoobs Snobbery, by Col. L. F. Copeland. Wednesday.—Primary reading; Grammar, its use and abuse; Spelling; Concert recitation; Composition; Primary reading; U. S. History; U. S. Constitution; Essay; Emphasis and inflection; Stocks and bonds; Grammar. Evening.—The philosophy of fun. Thursday, directors' day.—Elementary sciences; U. S. History; Gesture; How to classify and conduct a school in arithmetic; Ventilation; Cultivation of the senses; Essay; Annual German address; Course of study for ungraded schools; Practical knowledge; Discussion. Evening.—The Hero, recognized and unrecognized, Rev. C. T. Steck. Friday.—Primary arithmetic; Language lessons; Primary arithmetic; Local geography and history; The nature of culture; Advanced geography; Address, State Supt. Higbee.

(If that didn't fill up the vacant spaces in the teacher's heads we are mistaken.)

BROOKLYN.—Several years ago Monsieur C. Pitteau of the Department of Education in France, visited this country for the purpose of inspecting its public schools. After spending two days in No. 11 in Washington avenue, near Greene, he started upon his tour of observation. Upon finishing his work he returned to give a parting day to the school with which he had commenced. His decision that No. 11 was the best he had seen in America could not be otherwise than a great stimulus to both teachers and pupils.

We could not wish a more pleasant experience to principals than a day devoted to the examination of the workings of Mr. Lewis' classes. They come from the wealthy and well-to-do families of the city, but the veneering of politeness generally met with among such children is not to be found here; in its place the courtesy flowing from a good heart is apparent, the teachers therefore have a paradise. In class-work the teacher has an attention undivided and complete; worryment does not paralyze her efforts; steady progress on the part of the pupils rewards her zeal. No monitor stands on the stairs to watch, no policeman at the gate to awe; these boys and girls are as much of a law unto themselves as boys and girls can be. There are no poor teachers because the committee have had confidence in the principal and have felt that a man competent to manage a school knew just what he wanted to secure the greatest success. The key to such a blissful state of affairs is this: Mr. Lewis is a teacher and a gentleman. Whatever else may be said for or against Brooklyn schools, a man of ability can there impress himself upon his charge with no let or hindrance, and therein lies the highest compliment to the authorities.

W. D. M.

CONNECTICUT.—The Connecticut Industrial School for Girls, at Middletown, Conn., the establishment of which

is due to Mr. Fabrique's exertions, has made a most encouraging progress. It is not a State institution, but a private charity, incorporated and employed by the State for the custody, guardianship, discipline and instruction of girls between eighteen and sixteen years of age who are stubborn and unruly, truants, vagrants and beggars, those in danger of falling into habits of vice and immorality, and those who have committed any offence punishable by fine or imprisonment, other than imprisonment for life. For several years it failed to impress the State authorities with its importance, but its value has now been practically demonstrated, and the last Legislature appropriated \$10,000 for a new building for exclusive use by the State, with the assurance that the State would contribute to its support.

In addition there are other buildings, known as the Street, Pratt, Allyn and Rogers Homes, founded by bequests made from families bearing those names. The design is not to have more than thirty-five girls in each family, and the "homes" are built with this end in view, but it has been necessary to crowd at times. The inmates are of the viciously-inclined class, who are for the most part the children of paupers, criminals and inebriates; and born and bred in the midst of vice, familiarized with it from infancy, almost of necessity they grow up in ignorance and indolence, and become prematurely vicious and an expensive class. Mrs. S. S. Johnson, Mrs. Butterworth, Miss Ayres and Miss Scudder are the matrons and possess superior qualifications to render valuable assistance to the superintendents, Rev. Charles H. Bond and wife. Next to a proper care for health and morals, the girls are taught to read and write and to do housework and sewing, with special instruction in music by Miss May Merry. There is also a box-shop in which many of the girls are employed, and which is found to be a profitable acquisition to the institution, and it is intended to add a custom laundry. There is a class of honor, the graduates from which are provided with suitable homes.

LETTERS.

The need of normal schools, or as you term them, educational schools, is very pressing. If we cannot have them in every county, why not in each Senatorial district? There are in this State thirty-two Senatorial districts; in each district let there be held a normal institute at the most central geographical or railroad location for four weeks. Make a course of instruction necessary and obligatory to secure a certificate to teach; and no certificate should be granted for a longer term than one year; annual attendance must be secured. I would have all attend these institutes. At present many of those who hold State certificates utterly ignore county institutes, are behind the times and do not do the same quality of work that many teachers do who hold only a second-grade certificate.

(Those who hold life-certificates in our State and Normal Schools, graduates and the college graduates do not attend the county institute, it is true. One reason is that they feel as advanced pupils would if put in the primary school. The method proposed by B. is not a good one. There should be county institutes or primary educational schools held annually for those who have never taught four to six weeks in length. There might also be held in each Senate district a gathering of teachers who hold life-certificates. The present plan is a very inefficient one. Those who have never taught school and those who have taught for twenty-five years are put beside each other at the institute. If classification is good anywhere it is good in an institute.)

The Canada plan is a good one. (1) The inexperienced who want to try teaching must attend a county institute for four to six weeks, leaving with one-year certificate. (2) Next go to the normal school for a year, and get a two-year certificate. (3) Next go to normal school for life-diploma. By this plan a young man may try his hand at teaching for one year with but little preparation, but he could do it but once. If he wants to teach more he must betake himself to the normal school. The outrageous nonsense in the plan employed in the Empire State is that it allows those to teach who have no knowledge of teaching, for a quarter of a century. A young man works on the farm in the summer and teaches the school during the winter. Why? The school pays him \$30 a month but the farm \$12 to \$15 only in the winter.

But the holders of life-diplomas ought to be got together; if they won't come of their own accord then drag them in.—EDITOR.)

1. I strive above all things to teach my pupils to think deep, earnest thoughts. Will not the editor and some of the experienced teachers give me their ideas or their

experience on this point? I have received helps from the INSTITUTE in many ways, yet many things I read could not be applied to this school.

2. Is it better to teach children from five to eight years to write by imitation, or wait until they can understand the principles, and teach in that way? T. G.

(This is indeed a mighty thing; it is TEACHING in reality; most teaching is the shadow of this. Suggestions will be found elsewhere.)

3. Young children must be taught penmanship by imitation, but as the work goes forward call attention to the fact that the *d* is like the *a*, so the *g*, etc.; that the *q*, *y*, *i*, *j*, etc., are alike in certain particulars.—EDITOR.)

EDUCATIONAL MISCELLANY.

For the SCHOOL JOURNAL.

NAMING THE GRADES.

One of the difficulties that makes its appearance in attempting to compare educational work, is the difference in the names of grades or classes. One town or city has one plan, another selects one quite different. "First grade" means one thing in Chicago and another in New York. This is a serious difficulty, and it makes its appearance at associations, when there is an attempt made to compare work. We notice drawings made by the "second grammar" grade of Brooklyn, and beside it the "fourth grade" of some other city; we are told they mean about the same thing. This confusion should be remedied. We propose this plan:

Name the grades from the age of the child. The "first grade" means what the child should be taught during the first year of his life; the "sixteenth grade" means that a child of sixteen years should study, etc. There would be four "nursery grades"—grades in which the child would be solely under parental care; three "Kindergarten grades"—grades in which skilled persons would introduce knowledge by means of plays; six "primary grades;" eight "advanced primary grades"—these last covering the field now absurdly called grammar grades, where there is little grammar taught now and where there will be still less very soon.

For the SCHOOL JOURNAL.

CHANGE INEVITABLE.

By A. M. B.

The outlook in the educational field portends change; changes meet us at every angle. The pioneers of reform are already trenching the ground. The theories, methods, and systems of the past are not sufficient for the demands of the present, or the needs of the future. Dry theorizing has been accepted for practice, and the shadow for the substance, till it has been followed by a surfeit.

The log school-house gave to the world many of its brightest ornaments. This does not prove that we must retain the log schoolhouse, that was a feature merely. The rage for teaching has brought forward the good, bad and indifferent alike.

A day is coming and near at hand, when science, and science alone will rule. It is not that the general principles of language and mathematics are to change; for these are not the ends of education; a person fitted for life is the true object. Hence, a change in our educational system is imperatively demanded that shall produce results worthy of the energies employed; a change in which common sense shall take the place of the nonsensical performances which are called education and are hurled at the pupil, who stands with staring eyes and mouth agape, wondering what it means and how he may apply it.

THE SUN.—Prof. S. P. Langley has made the following calculations: A sunbeam one centimeter in section is found in the clear sky of the Alleghany Mountains to bring to the earth in one minute enough heat to warm one gramme of water by 1° C. It would therefore, if concentrated upon a film of water 1-500th of a millimeter thick, one millimeter wide and ten millimeters long, raise it 83 1-3° in one second, provided all the heat could be maintained. And since the specific heat of platinum is only 0.0032 a strip of platinum of the same dimensions would, on a similar supposition, be warmed in one second to 2,603° C., a temperature sufficient to melt it.

REVISION OF THE SCHOOL CURRICULUM.

By Hon. M. A. NEWELL.

The charge which I bring against our common schools is that they fail to give power commensurate with the knowledge they impart. I think the old Scotch parish school is the prototype of the American school. The parish school had but three classes: The Spelling class, the Testament class and the Bible class. Every American boy is brought up with the comfortable assurance that he may one day become president: so every Scottish laddie was to be a preacher. The common schools are regarded merely as a flight of steps leading by gradual approach to the high school, or college, and university, and it is evident that the steps should be made as few and as easy as possible. The question is not how much can be taught that will be useful in life, but what is the passport to the higher grade.

In a revision of the common school curriculum, the changes I would suggest may be embraced under three heads:

1. The addition of new subjects of instruction.
2. A new apportionment of the old studies with regard to the time devoted to them.
3. A re-arrangement of the studies in the order of time.

Children should be taught Christian morals and their duties to one another. The virtues of honesty, truthfulness, and purity should be inculcated, not on occasions merely, but, "line upon line, precept upon precept." I would also suggest the teaching of the laws of health—not physiology as it is now studied by advanced pupils, but a few simple, homely lessons. The revision will not be complete unless we add some form of manual industry. Girls should be taught needle-work. I wish I could dispose of the boys as easily. They need the training, but the means of employing them are not so obvious. The proposed revision includes a new apportionment of the time given to the usual common school studies. I would rob spelling of three-fourths of the time ordinarily given to it. I would discard English grammar altogether from the common schools of which I am speaking. Grammar, logic, and rhetoric I would remand to the high school or the college. In place of grammar, so called, I would give practice in speaking and writing English. I would cut off at least one-third of the arithmetic. The whole section on vulgar fractions should be expunged, with the exception of such as ordinary life may require. Our decimal system is amply sufficient for the common school. History and geography I would abolish in name, but not in reality. I would make them part of the daily readings and conversation between teacher and pupils.

There should be a new arrangement of the order of the old common school studies. The traditional order is: The alphabet, spelling, reading, arithmetic, writing, geography, grammar, history. A better order would be drawing, writing, reading, composition, arithmetic, history, and geography. I have omitted grammar for reasons previously assigned. I have not mentioned spelling because I assume that constant writing will teach the spelling of words in general use.—Address at Nat. Association.

EDUCATION OF GIRLS.

The Rural New Yorker says: "What would one think of a mother who provided for her daughter's traveling outfit, over a long, rough journey, where she was to meet all vicissitudes of climate and weather, only a flimsy ball dress? It might be very beautiful in fabric, and adorned with abundance of the choicest flowers and sparkling gems, but it would be a miserable failure as a traveling dress, and we should almost think the woman deficient in sound sense who should provide it for such a purpose.

"But is it any more sensible to send our girls out over the rough journey of life with only one stock of accomplishments to meet the wants of this every day working world? How many girls marry without the slightest preparation in the way of domestic knowledge and self-reliance in managing home af-

fairs. It is fondly hoped that skill will come to them and that they will manage somehow to keep a house in respectability and comfort; but oh, that ball-dress traveling suit! How poorly it answers in the wear and tear of the road.

"Don't buy everything for the girls. Trust them with the money after giving them as much good advice as you please. Let them learn how to buy by actual experience. If they make some mistakes let them abide by them just as you have to. Said a boy of a brother skater who had met with a tumble: 'Let him fall down. That's the way to learn.' It is the way we all learn a great many things. If Jenny's pretty blue cambric fades out white, let her bleach it and make the best of it; but learn the lesson also of avoiding that alluring, deceitful shade in the future.

"Let her learn to make bread from the beginning to the end of the process, and teach her the most thrifty, excellent short cuts to perfection in all departments of cookery.

"It is not needful to go through the tedious processes our grandmothers used to beating eggs to a froth with a knife, waiting all day for bread to rise, and so on, in a world where egg beaters are to be had, and Vienna yeast-cakes which will answer the purpose of rising in an hour or two.

"Let her eschew cream-of-tartar and soda when good baking powder is to be had, and adopt all similar improvements. Life and time are too precious to be needlessly wasted on these old-time crudities. Housekeeping need not and should not be half so hard to the girls at the present time as it was for us, if they only will take hold and fit themselves for the business before actually in the whirl of it. What merchant would send out a ship under a captain who knew nothing of navigation? Would not there be likely to come disaster and distress enough in such a case? Should not the home pilot be equally qualified?"

THE SUN'S LIGHT AND HEAT.

How is the sun's heat maintained? How long has it lasted already? How long will it continue? Are there any signs of either increase or diminution?—questions to which, in the present state of science, only somewhat vague and unsatisfactory replies are possible.

As to progressive changes in the amount of solar heat it can be said, however, that there is no evidence of anything of the sort since the beginning of authentic records. There have been no such changes in the distribution of plants and animals within the last two thousand years, as must have occurred if there had been, within this period, any appreciable alteration in the heat received from the sun. So far as can be made out, with few and slight exceptions, the vine and olive grow just where they did in classic days, and the same is true of the cereals and forest-trees. In the remoter past there have been undoubtedly great changes in the earth's temperature, evidenced by geological records—carboniferous epochs, when the temperature was tropical in almost arctic latitudes, and glacial periods, when our now temperate zones were incased in sheets of solid ice, as northern Greenland is at present. Even as to these changes, however, it is not yet certain whether they are to be traced to variations in the amount of heat emitted by the sun, or to changes in herself, or in her orbit. So far as observation goes, we can only say that the outpouring of the solar heat, amazing as it is, appears to have gone on unchanged through all the centuries of human history.

What, then, maintains the fire? It is quite certain, in the first place, that it is not a case of mere combustion. It has been shown that, even if the sun were made of solid coal, burning in pure oxygen, it could only last about six thousand years: it would have been nearly one-third consumed since the beginning of the Christian era. Nor can the source of its heat lie simply in the cooling of its incandescent mass. Huge as it is, its temperature must have fallen more than perceptibly within a thousand years if this were the case.

Two different theories have been proposed, which are probably both true to some extent. One of them

finds the chief source of the solar heat in the impact of meteoric matter, the other in the slow contraction of the sun. As to the first, it is quite certain that a part of the solar heat is produced in that way; but the question is whether the supply of meteoric matter is sufficient to account for any great proportion of the whole. As to the second, on the other hand, there is no question as to the adequacy of the hypothesis to account for the whole supply of the solar heat; but there is yet no direct evidence whatever that the sun is really shrinking.

The basis of the meteoric theory is simply this: if a moving body be stopped, either suddenly or gradually, a quantity of heat is generated which may be expressed, in calories, by the formula— $\frac{mv^2}{850}$, in

which m is the mass of the body, in kilogrammes, and v its velocity in metres, per second. A body weighing 850 kilogrammes, and moving one metre per second, would, if stopped, develop just one calory of heat—i. e., enough to heat one kilogramme of water from freezing point to 1° Cent. If it were moving five hundred metres per second (about the speed of a cannon ball), it would produce two hundred and fifty thousand times as much heat, or enough to raise the temperature of a mass of water equal to itself nearly 300° Cent. If it were moving, not five hundred metres per second, but about seven hundred thousand (approximately the velocity with which a body would fall into the sun from any planetary distance), the heat produced would be $1,400 \times 1,400$, or nearly two million times as great—sufficient to bring a mass of matter many thousand times greater than itself to most vivid incandescence, and immensely more than could be produced by its complete combustion under any conceivable circumstances. With reference to this theory, Sir William Thompson has calculated the amount of heat which would be produced by each of the planets in falling into the sun from its present orbit. The results are as follows, the heat produced being expressed by the number of years and days through which it would maintain the sun's present expenditure of energy:

| | Years. | Days. |
|-------------------|--------|-------|
| Mercury | 6 | 219 |
| Venus | 83 | 326 |
| Earth | 95 | 19 |
| Mars | 12 | 259 |
| Jupiter | 32,254 | |
| Saturn | 9,652 | |
| Uranus | 1,610 | |
| Neptune | 1,890 | |
| Total | 45,604 | |

That is, the collapse of all the planets upon the sun would generate sufficient heat to maintain its supply for nearly forty-six thousand years. A quantity of matter equal to only about one one-hundredth of the mass of the earth, falling annually upon the solar surface, would, therefore, maintain its radiation indefinitely. Of course, this increase of the sun would cause an acceleration of the motion of all the planets—a shortening of their periods. Since, however, the mass of the sun is three hundred and thirty thousand times that of the earth, the yearly addition would be only one thirty-three-millionth of the whole, and it would require centuries to make the effect sensible. The only question, then, is, whether any such quantity of matter can be supposed to reach the sun. While it is impossible to deny this dogmatically, it, on the whole, seems improbable, for astronomical reasons. In the first place, if meteoric matter is so abundant, the earth ought to encounter much more of it than she does; enough, in fact, to raise the temperature above that of boiling water. Then, again, if so large a quantity of matter annually falls upon the solar surface, it is necessary to suppose a vastly greater quantity circulating around the sun between it and the planet Mercury. The process by which the orbit of a meteoric body is so changed as to make it enter the solar atmosphere is a very slow one, so that only a small proportion of the whole could be caught in any given year. Now, if there were near the sun any considerable quantity of meteoric matter—anything like the mass of the earth,

for instance—it ought to produce a very observable effect upon the motions of the planet Mercury, an effect not yet detected. For this reason astronomers generally, while conceding that a portion, and possibly a considerable fraction, of the solar heat may be accounted for by this hypothesis, are disposed to look further for their explanation of the principal revenue of solar energy. They find it in the probable slow contraction of the sun's diameter, and the gradual liquefaction and solidification of the gaseous mass. If, then, the sun does contract, heat is necessarily produced by the process, and that in enormous quantity, since the attracting force at the solar surface is more than twenty-seven times as great as gravity at the surface of the earth, and the contracting mass is so immense."—From C. L. Yonng's "Sun's Light and Heat."

SILK AND SILK CULTURE.

The culture of raw silk as an American industry is now exciting far-spread interest all over the United States. The growing demand in our home market for the raw materials is yearly on the increase. New silk-mills are springing up everywhere. At the present time we have no less than two hundred silk-mills in daily operation, whose product during the past year consumed 1,599,666 pounds of imported raw silk, at a cost of ten million dollars.

That the industry can be made a success commercially on this continent is already pretty well established. The climate in certain sections is peculiarly adapted to the purpose, the occupation is one that is singularly fitted to the deft skill of many of our thrifty housewives and women who seek an industry that will remunerate them handsomely; the difficulty at present is that of reeling, but native ingenuity will yet devise means to overcome this. That accomplished, and silk-rearing will become as much a source of commercial activity in this country as is now that of cotton or wool.

The moth is caused to deposit her eggs on large sheets of paper; these are rolled up loosely, with the eggs in them, in which form they are hung up again during the remainder of the summer and through the autumn. When the proper time for the hatching has arrived the reeler takes the rolls of paper and hangs them up towards the sun, the side to which the eggs adhere being turned from its rays, so that the heat may be transmitted to them through the paper. In the evening the sheets of paper are rolled closely up and placed in a warm situation. The same plan is followed on the next day, when the eggs assume a grayish color. On the evening of the third day, after a similar exposure, they are found to be of a much darker color, nearly approaching to black; and the following morning, on the papers being unrolled, they are seen to be covered with worms. In the colder latitudes the Chinese have recourse to the heat of stoves to promote the hatching of eggs.

The apartments in which the worms are kept are in dry situations, in a pure atmosphere, and apart from all noise, which is thought to be annoying to the worms, especially when they are young. A uniform degree of heat is constantly preserved. Flame and smoke are carefully avoided. The most sedulous attention is paid to the wants of the worms, which are fed during the night as well as the day. On the day of their being hatched they are furnished with forty meals; thirty are given on the second day, and fewer on and after the third day.

The egg from which the worm is produced is about the size of a grain of mustard-seed, and the worm itself, when first hatched, is a little slender thread about a quarter of an inch long. When it is about eight days old, its head enlarges and the worm becomes unwell; it remains three days without food, and in a lethargic state, the insect then literally creeps out of its own skin head foremost, lubricating its body to assist the extrication, fixing the skin to a mulberry-leaf by filaments of silk spun from its mouth, and making an escape by slow degrees. The operation seems to be a painful one, for the little animals are observed to rest several times during their progress, and to be much exhausted on its completion.

The busy silk-worm now begins to eat with great voracity and increases in length of half an inch in five days. The second coat becomes too small for the wearer, and is abandoned in the same manner as before. The worm keeps on eating as before, increases in five days more to three-quarters of an inch in length, and then follows a third molting or enlargement of the skin. Another period of five days elapses, a further enlargement to an inch and a half in length takes place, a fourth sickness intervenes, and for the fourth time the worm, finding its skin too tight for its bulky body, creeps out of it altogether, and enjoys a freer existence. This is now the fifth stage of its existence as a worm, and it begins to eat voraciously.

The next process is that of spinning; it surrounds itself with silk in the well-known cocoon form; these are put into a hot oven so as to kill the worm, which otherwise would eat his way out.—A. G. FEATHER, in *Journal of Science*.

VISIBLE SPEECH.

Articulation and lip-reading are taught to the eye at the Clark Institution for Deaf Mutes at Northampton, Mass., and in a number of State institutions for the deaf and dumb. We find in the *Inter-Ocean* an interesting account of the employment of that method in the Ohio Institution for the deaf and dumb at Columbus. Mr. Lutus of Tiffin, Ohio, one of the most prominent attorneys of that city, whose hearing of late years failed to such a degree that he was in danger of having to abandon his profession in the very prime of life. His hearing was so dull that it became necessary for him to keep an assistant always beside him to repeat the utterances of the court and his colleagues or opponents of the bar, and to reiterate the testimony of witnesses. He conceived the determination to study visible speech, and learn to hear with the eye; to read men's words as they ripple over the lips, by the lip's vibrations. He sent for Mrs. Kessler of the Ohio Deaf and Dumb Institute. She entered his family last June; he bent himself to his task of acquiring another language with eagerness; and now he goes into the court-room and amazes bench and bar by seeming to hear everything that is said. All he asks is to see the lips of the speaker, and his eye interprets everything that is said, even through the veil of a mustache, without having to ask speakers to repeat their words as much as most persons do who enjoy their hearing. His profession is recovered; the labor of his life is restored to him. Old friends meet him and look surprised that he understands every word that is spoken to him as easily as they do. Some of them ask if he has recovered his hearing, and look incredulous when he shakes his head. Now, he wonders that anything so plain as speech could have been so distinctly visible as it must always have been, yet so utterly unseen or unnoticed as it was, until he learned, not its a, b, c, but its syllables, only a few days ago.

IRELAND.—The Land League has been declared illegal by the English Government, and its leaders arrested because they counsel the tenants to pay no rent. On the 15th of September the Land League met in convention at Dublin, and remained in session three days. There were about one thousand delegates present. Parnell presided, and strongly advised farmers to distrust the land act, and not to appeal to land courts. After discussion and some inflammatory speeches, a series of resolutions were passed, declaring that nothing can give either prosperity or content to the people of Ireland but self-government; that the coercion act is tyrannical and generally diabolical; that the only way to settle the land question is to abolish landlordism, root and branch, and make the tiller also owner of the soil. The Land League sympathizers in New York earnestly exhort the Irish tenants to pay no rent; but they forget that there is an army of the Queen's sheriffs, backed by some thirty thousand red-coats, on the spot to collect the rent or seize the harvest, at the point of the bayonet if necessary.

FOR THE SCHOLARS.

A SCHOOL GIRL'S STRATAGEM.

Almost all boys and girls regard composition writing as the *bête noire* of school life. The young ladies and misses connected with the little boarding-school at Geneva were no exception to this rule. It required constant urging, accompanied by frequent severe reprimands to prepare the compositions demanded each Wednesday morning.

Wednesday mornings always developed an alarming number of headaches, toothaches, and various other ills, which made it utterly impossible for their suffering owners to be present at the exercises in question. Strong, robust, rosy girls, who had exhibited excellent appetites at the breakfast table, were suddenly taken ill when the ringing of the bell announced that the hour had arrived to read an unwritten composition. But matters took a new turn when Miss Ellen Thorpe became a pupil.

Nell Thorpe was a bright, clever creature, to whom study was easy. Her superior abilities soon placed her at the head of her classes. How much more were the teachers delighted when they discovered her rare talent for composition. It was not long before the influence of Nell's good example began to be felt in the school. Dull girls like Kate Kearns and Abby Blair, who never before had done anything but invent excuses to get rid of the task, now came promptly with a composition each time. Nor was this all. There was a very marked improvement in the style and matter of the essays as well.

The reader doubtless has already guessed that Nell was the composer of the much-admired essays. Her willingness to help her school-fellows in their lessons had prompted her room-mate, Cornelia Jones, to solicit her aid in getting up her compositions, and Nell soon found that, having once begun, it was no easy matter to get rid of the job, and that she was expected to furnish one for that indolent young lady regularly every two weeks. She was soon besieged by applications from the rest, to give only an idea or two, or to tell them how to begin or what to say, "just this once," so that at last, wearied by their teasing, Nell, who could do a thing more easily than tell any one else how to do it, would seize her pen, and dash off a composition in short order. The list of applicants grew so large and so persistent, that even Nell's temper at last gave way, and she resolved there must be a stop put to it. She devised a scheme, and when her school-mates came to beg her help she said:

"I will write your composition just this once more, if you promise not to show it, or even mention it, to any of the other girls; for you see, I'm trying to break off, and I'd be beset by the whole school if it were known I was doing it for you." Nell said this to each one separately, and each girl had agreed to the request.

By Tuesday at noon Nell had completed the seven essays, and handed them, at different times during the afternoon, to the girls for whom they were designed, with many whispered admonitions to secrecy. The compositions were then coolly copied by their respective owners, and by six o'clock in the evening were all handed in to Dr. Stone, whose rule it was to read over and correct all compositions before they were read in public the next day by the pupils.

"Why! how's this?" he exclaimed, as he began the perusal of a delicately perfumed page, bearing the name of Miss Abby Blair on the outside. "It seems to me I've read something similar to this already this evening. Let me see. Yes, here it is, purporting to be written by Cornie Jones;" and the astonished Doctor drew from the pile of essays another neatly written paper, and began to read:

"WOMEN JEWS.—By this term we do not mean Jewish women—those pretty, black-eyed daughters of Israel, conspicuous chiefly for their inordinate fondness for cheap jewelry and proportionate distaste for swine's flesh. No, it is not of these we would speak, but of that class of women, be they olive-skinned descendants of Abraham or pale-faced American Gentiles, who habitually ask and expect a dealer to 'fall' a few cents on the stated price of every article they purchase," etc., etc.

"They are the same all the way through," he said, as he finished comparing them. "The matter must be looked into. I see it all. It is the work of that clever rogue Miss Thorpe."

A further inspection of the essays yet uncorrected showed Dr. Stone that Clara Holmes and three others had also copied the essay, making seven in all.

The next morning when the students repaired to the study to receive their compositions preparatory to looking them over before the ten-o'clock exercises began,

none would have suspected that the Doctor was possessed of a scheme that was soon to bring delinquent pupils to shame. Ten o'clock came. The last chime of the bell found all the young ladies belonging to the Geneva Female Seminary, together with a few visitors from the village, assembled in the little chapel. Each young lady, as the roll was called, responded to her name by a prompt "prepared," which meant that she had written an essay, and was ready to read it. Dr. Stone, on this morning, commenced by calling on Nell, who read hers in her usual animated style. One after another was called upon and performed their duty, until only the doomed seven were left.

"Miss Katie Kearns, we will now hear from you," said the Doctor, with a sly smile.

Miss Kearns rose, sauntered leisurely up the aisle, bowed to the faculty, and read:

"WOMEN JEWS.—By this term we do not mean Jewish women—those pretty, black-eyed daughters of Israel, etc., etc."

Having finished the entire essay, she sauntered slowly back to her seat.

"Miss Clara Holmes," called the Doctor.

Miss Holmes was excused a short time ago," replied a school-mate, "but will be back soon. Ah! here she is now," she added, as Clara at that moment opened the door and advanced to her seat.

"Miss Clara, we will now listen to your essay," said the Doctor, a smile playing on his face.

Poor Clara, wholly unconscious that the audience had already been treated to a dissertation on "Women Jews," tripped forward to the platform, and read, in a clear, distinct voice:

"WOMEN JEWS.—By this term we do not mean Jewish women—those pretty, black-eyed daughters of Israel, conspicuous chiefly," etc., etc."

The visitors stared; the school-girls exchanged glances and winked and nodded at each other in a very knowing way. Katie Kearns looked amazed and indignant, as if she thought Miss Holmes had infringed on her rights, while Clara read complacently on, in blissful ignorance of the commotion, to the close of her essay, when she quietly took her seat.

"We will now hear Miss Jennie Howard read," said the Doctor, consulting the list he held.

But Miss Howard did not move. All eyes turned toward the desk where sat the mortified girl, with both hands spread over her face, which was crimson with shame and anger, vainly struggling to keep back the hot tears that were dropping through her fingers.

"Come, Miss Howard; we are waiting," said the Doctor. "Do not detain us."

A fresh burst of tears from Miss Jennie was the only response to this request.

"Really, Miss Howard, your conduct is inexplicable," pursued the Doctor. "I will give you five minutes in which to regain your composure, and I will then expect you to read whatever you have prepared for to-day's exercises. Meanwhile we will hear Miss Abby Blair read her essay."

But Miss Abby disappeared from sight. Her essay had been forgotten in her hurried exit, and was now lying on her desk, from whence the Doctor gravely directed a teacher to take it.

"As Miss Abby is not here to read it herself," he observed, "we will not prolong the exercises by waiting for her return. You may therefore read it for her, Miss Pincer."

With a frigid smile, Miss Pincer bowed acquiescence, and began reading the now familiar lines:

"WOMEN JEWS.—By this term we do not mean," etc., etc."

"There seems to have been a most marked unanimity of thought between many of our pupils this week," remarked the Doctor, as Miss Pincer closed; "but perhaps Miss Celia Macfarlane, who will now read, will favor us with something different."

The young lady thus mentioned half arose, and with a very red face and downcast eyes stammered out something about not being "prepared."

"We cannot accept that excuse, Miss Celia," answered the Doctor. "When I called the roll, you said you were prepared. How is it that you now say you are not? I have the best reason to suppose you have an essay this week, inasmuch as one bearing your name was handed to me last evening for correction. Your topic, if I remember rightly, was 'Women Jews,' and began after this style, 'By this term we do not mean Jewish women,' etc., etc."

The Doctor's words were met by a suppressed laugh all over the room, while Celia's embarrassment was most painful to witness. Her lips twitched and trembled as if she were about to cry, and the Doctor, who disliked

weeping scenes, desisted from saying anything further, but turning again to his list of names, said: "There are but two other essays to be read this morning—one from Miss Cornelia Jones, the other from Miss Patty Spencer. We will listen to yours first, Miss Cornelia."

These girls had been carrying on a whispered consultation for the last few minutes, and were at that particular moment engaged in hurriedly tearing up certain pink-tinted sheets of paper into small bits, and throwing them on the floor.

"We are ready to hear your essay, Miss Cornie," said he.

"I haven't any, sir—that is—I mean I tore it up," faltered Cornie, in a very low voice.

"And you, Miss Patty," he continued, "where is yours?"

The diminutive Patty gazed imploringly at the Doctor, and then sobbed out, "It's on the floor."

"Well, pick it up, and let us hear it," persisted the Doctor.

"I can't sir; it's all in little scraps. But if you'll excuse me this time, Doctor, I'll do better after this," was Patty's weeping response.

"As you have destroyed it, of course you cannot read it replied the Doctor; "but you can at least tell us the subject of your essay."

A long pause.

"Tell us the subject, Patty," he urged.

"It was about—about Women Jews," was Patty's reluctant reply.

An audible laugh from the audience, that could no longer be repressed, greeted this announcement.

"Miss Pincer," said he, when able at last to speak, "I wish you would see if you can find Miss Abby Blair. I have some remarks to make to all these young ladies who have been devoting themselves so assiduously to the Jew question the past week."

Miss Pincer went across the room straight to Abby's desk and called out:

"Come out, Miss Abby, you are wanted."

Miss Blair raised herself to her feet, smoothed out her blue hair ribbon, brushed the dust from her ruffled skirt, and walked with a crest-fallen air up the aisle, and stood in front of the Doctor, where she was joined by her six comrades.

A more thoroughly dejected, forlorn-looking squad of school-girls can scarcely be imagined. With their flaming faces buried in their pocket-handkerchiefs they awaited the dreadful reprimand they knew must be in store for them; but in this they were mistaken. The Doctor had no desire to add to their misery; he thought they already had been sufficiently punished. The practice of reading borrowed compositions was broken up in that school forever.—*Harper's Bazar.*

DON'T WORRY.

A saying which is often quoted to those who are apt to worry over things that have not happened and may never occur is; "Don't cross a bridge until you come to it." It is said to have originated in the following way:

There was once a man and woman who planned to spend a day at a friend's house, which was some miles distant from their own. So one pleasant morning they started out to make the visit; but they had not gone far before the woman remembered a bridge they had to cross which was very old and unsafe, and she began to worry about it. "What shall we do about the bridge?" she said to her husband. "I shall never dare to go over it, and we can't cross the river any other way."—"Oh," said the man, "I forgot that bridge; it's a bad place. Suppose it should break through. We should be drowned."—"Or suppose you should step on a rotten plank and break your leg, what would become of me and the baby?" "I don't know," said the man, "what would become of any of us, for I couldn't work, and we should starve to death." So they went on worrying, till they got to the bridge, when lo! and behold, since they had been there last a new bridge had been built; and they crossed over in safety, and found they might as well have saved themselves all their anxiety.

It's easy finding reasons why other people should be patient.—GEORGE ELIOT.

Goodness thinks no ill where no ill seems.—MILTON.

HORSFORD'S ACID PHOSPHATE,
IN MALARIAL PROSTRATION.

Have used Horsford's Acid Phosphate considerably, and like its effects very much; especially in malarial prostration.

G. M. BELL, M. D.

Benton Harbor, Mich.

BOOK DEPARTMENT.

NEW BOOKS.

Publishers will favor themselves and us by always giving prices of books.

NATURAL PHILOSOPHY FOR THE USE OF SCHOOLS AND ACADEMIES, by J. A. Gillett and W. J. Rolfe. New York: Potter, Ainsworth & Co.

The authors are well-known teachers, the former in the New York Normal College, the latter formerly headmaster in Cambridge High School. They have produced a most valuable volume, bringing the discussion up to the latest point. They have gone over a wide field of research and have combined the materials in a scholarly manner, and at the same time have fitted the product for the school-room. The fundamental facts are printed in coarse type; in this way the volume will be fitted for those who want a short course. The finer type contains additional matter that may be used or not, as the teacher may choose.

The volume is well printed and illustrated, and presents an inviting aspect to the pupil. It covers the whole field and will be favorably regarded by teachers.

THE NEW METHOD, OR SCHOOL EXPOSITIONS, by R. Heber Holbrook, Indianapolis: Indiana. Normal Teacher Publishing House.

Mr. Holbrook is the associate principal of the National Normal School at Lebanon, Ohio. He says: I have been urging for more than a decade of years, the failure of our school work in giving *producing power* to the pupils. The volume after a dedication to his trustees in Vineland, N. J. where he taught and held an "Exposition," goes on to tell what an exposition is and how prepared for, etc. He urges that every pupil should have an opportunity to show what he can do. He explains the method and the materials. Then the various studies are taken up and suggestions are made pertaining to each.

The volume is one that has much that is suggestive and valuable. Minute directions are given for the preparation of the sheets to be displayed, as in Botany, Geology, etc. The subject of this volume is a very important one. Most schools are merely learning mills; they should be taught to *do*. This we implicitly believe. The author on page 109 says: "the principles of all trades are being taught in the public schools now." Here is a mistake we think. The schools teach to *say*; the excellence of this volume is that it recommends *doing*. Perhaps we differ in terms. If so, then we say we are for schools that, *DO*.

THE ECLECTIC HISTORY OF THE UNITED STATES, by M. E. Thalheimer. Cincinnati: Van Antwerp, Bragg & Co.

This is an admirable book; the illustrations are beautiful, the printing clear and the paper fine. But there are other reasons for commending it. The writer has attempted to show that the American Republic has grown from the seed sown by all nations. Events are sketched with freedom and boldness. The text is supplemented with notes of a very interesting character; altogether it is a most admirable history and well suited for the schools.

We learn that the Committee on Text-Books of the New York Board of

Education have declined to adopt this volume for use in the schools of the city. The paragraph objected to is said to be this (page 81):

"A century before this the great Huguenot teacher Coligny had selected the shores of Carolina as a place of refuge for their persecuted ancestors. During the three years 1686-1688 one million inhabitants are believed to have fled from France because of the persecution by Louis Fourteenth. Besides those who came to America thousands went to England, Switzerland, and Holland."

We submit to the fair-minded men of all faiths whether a more accurate statement could be made or whether the truth could be stated less offensively. There are but two ways: (1) State the truth and not make it offensive. (2) Leave it out. But surely school children should know why there was such an exodus from France in the time of this same wrong-headed king. Have we not arrived at a period when we can look back in the dark past and see that our forefathers were wrong in many things they did?

A FRENCH AND ENGLISH DICTIONARY, by Profs. De Lolme and Wallace and Henry Bridgman; revised, corrected and considerably enlarged from the latest edition of the dictionary of the French Academy, by Prof. E. Roubaud. New York: Cassell, Petter & Galpin.

It is sufficient to say of this admirable book that in its 116th edition of one thousand each, at the price of \$1.50 only, it has no superior. The type is clear, it is finely printed, strongly and tastefully bound, and contains over 1,200 pages. It is a marvel of cheapness, and will be welcomed by hosts of students.

BARTHOLOMEW'S NATIONAL SYSTEM OF INDUSTRIAL DRAWING by W. N. Bartholomew. New York: Potter, Ainsworth & Co.

We have examined this system with more than ordinary care because we feel that only one-tenth of the time that should be employed in drawing is bestowed upon it. Signs of a great change are upon us, let all take heed. One of the best symptoms is the sale of this system of books. Since they were put on the market in September 360,000 have been sold. This is a testimonial of their merits that ought not to be overlooked.

There are four small books selling at five cents each, designed for the primary school and twelve others designed for the advanced school. An examination of the small books shows them to be a great improvement on the old Bartholomew books, good as we thought those to be. The peculiar excellence is this; the exercises are simple and yet such as cultivate the taste of the pupil; they do not repeat geometrical forms as is very common, but every new form as soon as learned is introduced in the exercises that follow. This is a capital plan and it is well carried out. The placing of the leading points is a great help. It concentrates the energies of the learner. The four small books have lines to be traced.

The eight larger books continue the plan of the books just described. The size of the figures are increased, the judgment is appealed to and the eye educated. The series is well graded and was evidently constructed by a very practical teacher. We deemed it

worthy of all praise. It is accompanied with a manual of directions that are very explicit and will be helpful to the teacher.

THE SUN, by C. A. Young, Ph.D., LL.D. New York: D. Appleton & Co.

This volume by the professor of astronomy in Princeton College, presents a general view of what is known and believed about the sun. It is written for that large class who have sufficient intelligence and education to be interested in scientific subjects when presented in an untechnical manner. The author has combined materials from a large number of authors. He has thus made a volume which will be worth a place in the valuable scientific series published by the Messrs. Appleton.

IN THE BRUSH, by Rev. Hamilton W. Pierson, D.D. New York: D. Appleton & Co.

Dr. Pierson, formerly president of Cumberland College, was employed by the American Bible Society for many years to act as colporteur in the South and Southwest. He undertook to distribute Bibles, so that every family should have one. His adventures, as detailed by him, are very interesting and give a picture of a time that has not wholly passed away even yet. No one can be said to know this country that does not know this side of its life. The volume is full of interesting sketches.

COUNTRY BY-WAYS, by Sarah Orne Jewett. Boston: Houghton, Mifflin & Co. Little Classic style. Price \$1.25.

Eight of Miss Jewett's charming sketches, some of which we remember reading in the magazines, have been gathered into a "Little Classic" volume. A pretty sure test of a new book is to read it aloud, and "Country By-Ways" stands this well. The length of each story is admirably suited to reading at one sitting and we would name this book as one of the first to put on a list for reading aloud winter evenings, as so many families do. Miss Jewett is at her best in delineation of New England life, and of the eight sketches in "Country By-Ways," we think "Andrew's Fortune" the most perfect.

THE ILLUSTRATED BIRTHDAY BOOK OF AMERICAN POETS edited by Almira L. Hayward. Boston: James R. Osgood & Co.

The plan of this Birthday Book has been to select from all American poets appropriate lines, and leave a blank space opposite with the date, for the autographs or names of friends. Besides this a number of portraits have been interspersed which will greatly add to the interest and value of the book. We notice the faces of T. B. Aldrich, W. C. Bryant, Emerson, Bret Harte, Holmes, Howell, Longfellow, Lowell, Poe, Stedman, Stoddard, Whittier and others. The poetical selections are well made, the index of authors and index for birthdays at the close of the book make it complete in every respect. For young or old this little volume will make as pretty a Christmas present as can be found and it is especially appropriate as a birthday gift.

THE LIFE OF JOHN WESLEY, by Rev. R. Green. Cassell, Petter, & Galpin. This is a neatly printed volume of 186 pages, and is well worthy of a wide

circulation. Everybody who can read should read the life of this truly great man. When alive he could find no church to preach in; in 1876 a monument was erected to his memory in Westminster Abbey.

MAGAZINES.

The November *Scribner's* will have a melancholy interest for its many readers, as it was the last work of the late Dr. Holland, and will be the last one on which his name appears. The list of contributing writers is a strong one and their contributions entertaining. The frontispiece is a portrait of George Eliot accompanied by a paper. Mrs. Foote's Mexican adventures are begun and brightened by sketches from her own pen. E. C. Stedman and Austin Dobson have each a poem. Emma Lazarus exhibits her talent at prose writing for the first time in an article on Salvini and Salvini himself gives his "Impression of Some Shakespearean characters." Mrs. Burnett's new story "Through one administration" has just opened and one by Mr. Howells promised for next month.

The first article in the November *North American Review* has four writers, Lyman Trumbull, Thomas M. Cooley, Benjamin F. Butler, Theodore W. Dwight.

The *St. Nicholas* for November is a sumptuous number from the frontispiece—a copy of one of Sir Joshua Reynolds' paintings—to the closing departments. As this is the first issue of the ninth year of this magazine an unusually good one was to be expected, but this one will exceed all that its readers can imagine. It is impossible to name all the delightful things to be found in it, but we mention the fact that there is another "Peterkin Paper," where they give a fancy ball, a long short-story by Louisa M. Alcott, called "An Old-fashioned Thanksgiving," a story for boys, by Daniel C. Beard, the very title of which will delight all boy-hearts, "A day on a Desert Island," the first chapter of "A Drummer Boy's Recollections," and some lessons drawn from the life of General Garfield.

Appleton's Journal for this month contains eleven well-selected articles, four of them continued. There is a paper re-printed from the *Cornhill*; "My troubles in Russia," from *Chamber's*; "Recollections of George Borrow," from *Athenaeum*; "Cimabue Brown on the Defensive," from *Belgravia*.

The November number of *Harper's* closes its sixty-third volume. Think of it! How so many years it has held its own up and going ahead of the times. There are particular features in this number which will present themselves forcibly to new subscribers and to others thinking about renewing their subscriptions. These are in brief, second paper of "Journalistic London," by Joseph Hatton; illustrated articles on "Ohio's First Capital" by Alfred Mathew; "In Cornwall with an Umprella" by Wm. H. Rideing; a full-page portrait of Dean Stanley and a reminiscence by Thomas Hughes; the serial "Anne" by Miss Woolson, and Thomas Hardy's novel, "A Laodicean."

Good Company for September has made a few slight changes in its ap-

pearance and its contents are of a lighter character. There are two stories one by Miss Woolson and one by Ellen W. Olney, four poems and some short entertaining sketches. The publishers announce "a rare chance" which gives for \$3.75, twenty-four numbers, two years, instead of one year's subscription.

NOTES.

TEACHERS who desire the best results in the school-room always avail themselves of superior text books. This class of workers will not overlook the standard list of Charles Scribner's Sons, to be found in another column of the JOURNAL. Scribner's series contains as progressive and helping and teachable books as anywhere to be found. "The New Chemistry" by Prof. Cooley, just issued, is a model text-book on the subject, and every teacher should examine it. It will be found to present the fundamental facts in a clear and accurate method. Prof. Cooley is remarkably fitted to write a book for schools on this subject; a thorough scholar himself, a successful teacher and a clear writer, he grasps the ideas and renders them plain. We deem this book one that contains the latest exposition of chemical truths, and hence it will interest the progressive teacher. A careful examination of the volume impresses us that it is just what is wanted in the school-room.

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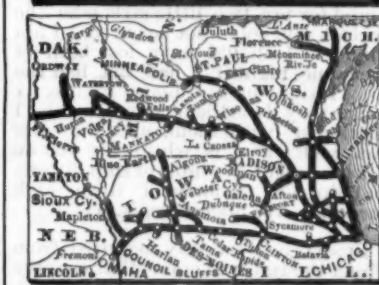
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